

Greater Vernon Water (GVW) Water Quality Report for August 2026

The following is the water quality summary for the Greater Vernon Water (GVW) utility.

1. Potable Sources

GVW has two sources that are routinely used for potable water. The two sources are Duteau Creek and Kalamalka Lake. Raw (untreated) water samples are taken at the intakes of Duteau Creek and Kalamalka Lake once per week. Two additional groundwater sources, Antwerp Deep Well and Ranch Well 3, may also be used in emergency situations or when there is additional demand to the system. Due to low water levels in the Aberdeen Plateau, the Antwerp Deep Well was turned on June 12, 2026, to supplement the Lavington and Coldstream Areas. Tables 1-3 summarize the results for bacteria and turbidity for the potable water sources in use.

Table 1 Duteau Creek Intake

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average ⁴
E.coli²	RDNO Lab	MPN/100 mL	8 ⁵	-----	10	109	58.7
Total Coliform	RDNO Lab	MPN/100 mL	8 ⁵	-----	2419.6	7270	5049.5
Turbidity	Operator Grab Samples	NTU	4	-----	2.08	6.89	4.24
Turbidity	SCADA ¹ Daily Average ³	NTU	31 Days	-----	1.05	5.69	3.20

¹SCADA: Supervisory Control and Data Acquisition.

²Drinking Water Treatment Objectives (Microbiological) for Surface Water Supplies in British Columbia (Sec 4.3): The number of E. coli in raw water samples should not exceed 20/100 mL in at least 90% of the weekly samples from the previous six months.

³SCADA data for this online analyzer is a 24 hour average of readings taken every 10 minutes

⁴Non detect values are used at ½ the reporting limit for average calculations.

⁵Each sample includes at least one duplicate sample taken for quality assurance purposes.

Table 2 Kalamalka Lake Intake

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average ⁴
E.coli ²	RDNO Lab	MPN/100 mL	10 ⁵	-----	1	5.2	3.1
Total Coliform	RDNO Lab	MPN/100 mL	10 ⁵	-----	3.1	22.3	9.9
Turbidity	Operator Grab Samples	NTU	5	-----	1.42	3.18	2.44
Turbidity	SCADA ¹ Average ³	NTU	31 Days	-----	1.34	3.00	1.96

¹SCADA: Supervisory Control and Data Acquisition.

²Drinking Water Treatment Objectives (Microbiological) for Surface Water Supplies in British Columbia (Sec 4.3): The number of E. coli in raw water samples should not exceed 20/100 mL in at least 90% of the weekly samples from the previous six months.

³SCADA data for this online analyzer is a 24 hour average with readings taken every 15 seconds.

⁴Non detect values are used at ½ the reporting limit for average calculations.

⁵Each sample includes at least one duplicate sample taken for quality assurance purposes.

Table 3 Antwerp Deep Well Intake

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average
Turbidity	SCADA ¹ Average ²	NTU	31 Days	-----	0.03	0.11	0.05

¹SCADA: Supervisory Control and Data Acquisition.

²SCADA data for this online analyzer is a 24 hour average with readings taken every 15 seconds.

2. Agriculture/ Irrigation Sources

The sources used for irrigation supply include Duteau Creek, King Edward/Deer Creek, Goose Lake, Coldstream Ranch Well #2 and Well #3. Table 4 summarizes the daily flows for each irrigation system.

Duteau Creek is separated into a potable water system and a non-chlorinated, non-potable water system, the latter of which is used exclusively for irrigation purposes. The other sources are separated from the potable system and are not chlorinated.

The irrigation season is from April 15 to September 15. Irrigation water used during the off season is used mainly for livestock watering. This water comes from Ranch Well #2, Ranch Well #3, King Edward and Duteau Creek.

Table 4 Irrigation Volumes for Irrigation Sources over the Month

Irrigation Sources	DCWTP	Well 3	Well 2	King Edward
Min (ML/Day)	1.86	0.00	0.00	1.00
Max (ML/Day)	3.56	4.24	1.15	7.46
Average (ML/Day)	2.82	2.27	0.29	4.52
Monthly Total (ML)	87.33	70.29	9.01	140.07

3. Treatment Plants

GVW has two treatment plants: Duteau Creek Water Treatment Plant (DCWTP) and Mission Hill Water Treatment Plant (MHWTP). At the DCWTP, water is treated with a coagulant and mixed to create a floc before Dissolved Air Flotation (DAF) achieves clarification. Chlorine is added after clarification to ensure contact time for the removal of viruses, followed by Ultra-violet (UV) disinfection. Finally, an additional dose of chlorine is added before entering the distribution system to maintain residual chlorine throughout the system. MHWTP contains dual disinfection which includes UV and chlorine. The Antwerp Deep Well is a confined groundwater aquifer that isn't influenced by surface water. Because of this classification, the Antwerp Deep Well is chlorinated at the pumphouse, and no additional treatment is necessary.

Tables 5, 7, and 8 summarize results for chlorine, bacteria, turbidity, and UV Transmittance (UVT). Table 6 summarizes the log removal of viruses at the DCWTP.

Table 5 Duteau Creek Water Treatment Plant Reservoir

Parameter	Laboratory	Units	# of Samples	# of Deviations	Min	Max	Average ⁴
Free Chlorine ²	SCADA ¹ Daily Average	mg/L	31 Days	-----	1.80	2.09	1.92
E.coli	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Turbidity ²	SCADA ¹ Daily Average	NTU	31 Days	-----	0.10	0.26	0.15
Pre UVT ³	SCADA ¹ Daily Average	%	31 Days	-----	85.64	88.31	86.81

¹SCADA: Supervisory Control and Data Acquisition.

²Operation Guideline: As outlined in Deviation Response Plan, free chlorine >1.0 mg/L, turbidity <1.0 NTU.

³UVT is monitored pre-UV treatment which is used to determine UV dosage.

⁴Non detect values are used at ½ the reporting limit for average calculations.

This month, 0 m³ of off-spec water occurred at DCWTP.

Table 6 DCWTP – Log Removal of Viruses

Log Removal of Viruses ¹	
Days Monitored	31 Days
Days 4-Log Inactivation Achieved	31 Days

¹4-log virus removal logged by the minute on SCADA.

Table 7 Mission Hill Water Treatment Plant

Parameter	Laboratory	Units	# of Samples	# of Deviations	Min	Max	Average ³
Free Chlorine	SCADA ¹ Daily Average	mg/L	31 Days	-----	2.07	2.22	2.19
E.coli	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Turbidity²	SCADA ¹ Daily Average	NTU	31 Days	-----	1.30	3.18	2.01
Pre UVT	SCADA ¹ Daily Average	%	31 Days	-----	90.91	92.04	91.48

¹SCADA: Supervisory Control and Data Acquisition.

²Operation Guideline: As outlined in Deviation Response Plan, free chlorine >0.8 mg/L, turbidity <3.0 NTU.

³Non detect values are used at ½ the reporting limit for average calculations.

This month, no off-spec water occurred at MHWTP.

Table 8 Antwerp Pumphouse

Parameter	Laboratory	Units	# of Samples	# of Deviations	Min	Max	Average ³
Free Chlorine²	SCADA ¹ Daily Average	mg/L	31 Days	-----	0.52	0.77	0.70
E.coli	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1
Total Coliform	RDNO Lab	MPN/100 mL	4	-----	<1	<1	<1

¹SCADA: Supervisory Control and Data Acquisition.

²Operation Guideline: As outlined in Deviation Response Plan, free chlorine >0.25 mg/L, turbidity <1.0 NTU.

³Non detect values are used at ½ the reporting limit for average calculations.

⁴Manganese Aesthetic Limit – 0.02 mg/L. Manganese Maximum Allowable Concentration – 0.12 mg/L.

4. Distribution

While the domestic GVW system has areas that are normally served by either of the two main sources (DCWTP or MHWTP), the system is interconnected with the ability to move water from each source to various parts of the system. The distribution areas from the sources may change depending on water demands, source water availability or water quality, and is therefore considered a combined system for the purposes of data reporting. GVW has approximately 23,000 service connections. When possible, water source change notices may be put out to advise customers of a change. When the Antwerp deep well is in use, it enters the system in Lavington.

Table 9 summarizes the daily flow for each distribution system. The Duteau, Kalamalka, and Antwerp systems have many locations where the sources meet. This means there are areas within the distribution system where there is a blend of water that can be identified by the conductivity of the water.

Table 9 Volumes for GVW Distribution Systems over the Month

Volumes	DCWTP	MHWTP	Antwerp Deep Well
Min (ML/Day)	13.20	17.00	0.83
Max (ML/Day)	32.40	33.45	1.83
Average (ML/Day)	19.41	27.91	1.47
Monthly Total (ML)	582.40	837.17	45.56

Table 10 summarizes results for chorine, bacteria, and turbidity for the combined distribution system which includes the Duteau distribution system, the Kalamalka distribution system and the Antwerp Deep Well. These results are from grab samples taken weekly at designated spots within the distribution system.

Table 10 Combined Distribution

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average ²
Free Chlorine¹	Operator Grab Samples	mg/L	107	6 ⁴	0.05	2.13	1.10
Total Chlorine	Operator Grab Samples	mg/L	107	-----	0.09	2.40	1.36
E.coli	RDNO Lab	MPN/100 mL	113 ³	-----	<1	<1	<1
E.coli	CARO	CFU/100 mL	0	-----	-----	-----	-----
Total Coliform	RDNO Lab	MPN/100 mL	113 ³	1 ⁵	<1	42.9	<1
E.coli	CARO	CFU/100 mL	0	-----	-----	-----	-----
Turbidity¹	Operator Grab Samples	NTU	107	3 ⁶	0.18	56.70	2.39

¹GVW WQ Deviation Response Plan: free chlorine >0.20 mg/L, turbidity <5 NTU.

²Non detect values are used at ½ the reporting limit for average calculations.

³Three samples per week are ran in duplicate for quality assurance purposes.

⁴Six samples were <0.2mg/L of free chlorine. Four sites are on the City of Veron low chlorine site program. One other site was sampled and flushed until adequate chlorine concentrations returned. The remaining site could not be flushed due to water restriction concerns. All six sites showed no bacterial contamination.

⁵One sample had a total coliform result of 42.9 MPN/100mL with <1 MPN/100mL of E.coli. This sample site was a known dead-end on the Antwerp system which was being monitored for high manganese and iron. This sample arrived to the laboratory with a turbidity of 56.70 due to the extremely high iron content. This high iron content may have resulted in a false positive due to the background color. The sample site was flushed and a second sample was taken with a result of <1.0 MPN/100mL. This water main has since been deactivated and all customers have been switched over to another looped water main. All other samples this month were <1 MPN/100mL

⁶Three samples had >5 NTU turbidity and were deemed a major deviation as per the GVW deviation response plan. Two samples were taken from the Antwerp distribution system at a known dead-end that was being monitored for high manganese and iron. This water main has since been deactivated and all customers have been switched over to another looped water main. One sample was taken in the Kalamalka distribution system. The Kalamalka lake distribution system was on a WQA during that time due to high turbidity in the source water.

Table 11 summarizes the monthly manganese results for sample sites within the Antwerp distribution area. The Antwerp deep well contains manganese at concentrations above the Canadian Drinking Water Guideline Aesthetic Objective (AO) but below the Maximum Allowable All samples are tested at a laboratory that is accredited to test for manganese.

Table 11 Antwerp Manganese

Starting August 25, 2026, GVW started adding a polyphosphate compound to sequester the manganese and prevent it from precipitating out of solution within the water distribution system. This polyphosphate compound is a food safe additive as required by Health Canada.

Date	Site	Results (mg/L)	Additional Comments
4-Aug-26	Antwerp Springs PH 2	0.09	Source
4-Aug-26	Brewer Road PS	0.05	
4-Aug-26	Giles Drive BO	0.05	
4-Aug-26	Aberdeen Road SS	0.02	
4-Aug-26	Noble Canyon Road SS	0.03	
10-Aug-26	Antwerp Springs PH 2	0.09	Source
10-Aug-26	Brewer Road SS	0.03	
10-Aug-26	6015 Highway 6 SS	0.57	
10-Aug-26	Highway 6 SS	0.27	
18-Aug-26	Antwerp Springs PH 2	0.09	Source
18-Aug-26	Springfield Road SS	0.02	
18-Aug-26	Bessette PRV	0.03	Site receiving mix of Duteau and Antwerp water at time of sample
18-Aug-26	Brewer Road	0.06	Customer house
25-Aug-26	Brewer Road PS	0.03	
25-Aug-26	Giles Drive BO	0.11	
25-Aug-26	Aberdeen Road SS	0.01	
25-Aug-26	Antwerp Springs PH 2	0.09	Source
27-Aug-26	Park Lane	0.03	Customer house

5. Water Quality and Customer Calls and Notifications

Water Quality Customer Calls within the GVW Service area are tracked and recorded. There were a total of 11 customer calls this month.

Table 12 Water Quality Customer Calls for the month

Type of Call	Number of Calls	Issue/Inquiry	Investigation	Source	Comments
Issue	6	Brown/Yellow Water	Yes	Antwerp	Customers contacted the RDNO stating their water was brown/yellow/murky in color. The customers were told that they were changed to the Antwerp water source which has a different taste, odor and appearance when compared to the normal Duteau water source. Additionally, the water source contains high concentrations of manganese. When chlorinated, the manganese oxidizes and comes out of solution resulting in a muddy brown color. The customers were told that the RDNO monitors the situation and ongoing manganese testing is occurring on routine sample stations and customer homes. The results are being shared through monthly reports and non-scheduled updates on the RDNO website. The customers were also informed that the RDNO is in constant contact with Interior Health about the manganese in the drinking water. Additionally, the RDNO is exploring options to reduce the oxidization of manganese in the drinking water. The customers were told any further health-related questions about manganese should be directed to Interior Health. Customers were told that they would be switched back to the Duteau source once the upper reservoirs show signs of water recovery, most likely in the fall or winter but that may change depending on water availability.
Inquiry	2	WQA Inquiry	No	Kalamalka	The customer called stating they saw the WQA that was issued for the Kalamalka source and was concerned whether the water was safe to drink. RDNO staff explained that the WQA was sent out due to high turbidity which could potentially inhibit chlorination effectiveness. The customer was advised that monitoring would continue to take place and all samples and instrumentation showed sufficient chlorination efficiency.
Inquiry	1	Water Hardness	No	Antwerp	The customers called asking for the water hardness of the Antwerp water to set their household appliances appropriately. Water hardness was provided to the customers.
Inquiry	1	Appliance Rebates	No	Antwerp	The customer called wondering if there were any rebates available for water softeners or appliances since they are now on hard water. The customer was informed that the RDNO

					does not offer any rebates for appliances at this time.
Issue	1	Dirty Water	No	Duteau	The customer called stating they had ongoing dirty water at their residence and asked for the area to be flushed. RDNO staff mentioned that Duteau water was being reintroduced into the system as water storage had increased and this may be causing some turbidity increases. RDNO will look into getting the area flushed if possible.

6. Operational or Maintenance Activity

Operational activity within the GVW City of Vernon service area is tracked and recorded using an online database. There was a total of 34 operational activities outlined this month in Table 13.

Table 13 Monthly operational work and maintenance for the City of Vernon

NUMBER OF LOCATIONS	TYPE OF WORK
0	Hydrant Maintenance
0	Hydrant Maintenance – Corrective
0	New Hydrant Install
1	Water Service GIS Locate
12	Water Main Break Repair
1	Property Damage Repair
0	Water Valve Maintenance
1	Water Valve Repair
3	Water Service Install
16	Water Service Repair
0	Reservoirs Cleaned

7. Localized WQA's and Other Activity

Water quality events are tracked and recorded below. The type of notices for any given event varies based on the severity of the event and the availability of water to adequately flush the area. This month, there was a total of one (1) Type 1 breaks or planned outage where no advisory was required, three (3) Water Quality Advisories (WQA), and three (3) Boil Water Notices (BWN).

Table 14 Monthly public notifications

Type of Notice	Reason	Area	Length or Time in Place	Number of Connections Affected
BWN	Water Main Break	1500 Pottery Rd area	August 2 – August 5	55
WQA	Water Main Break	2300 38 Ave area	August 4 – August 6	20
WQA	Water Main Repair	Venables Dr area	August 5 – August 10	9
BWN	Water Main Break	1500 Pottery Rd area	August 12 – August 25	32
WQA	High Turbidity	Kalamalka Lake water users	August 14 – August 28	~15,000
BWN	Water Main Break	Harbour Heights Rd	August 17 – August 24	12
BWN	Water Main Break	4500 Pleasant Valley Rd	August 24 – August 27	4
BWN	Service Leak	Rochdell Rd area	August 26 – August 28	55
BWN	Water Main Break	Mountview Rd	August 26 – August 31	3
None	Water Main Break	23 St and 25 Ave	August 28	0
None	Water Main Break	Harbour Heights Rd	August 29	12
WQA	Planned Tie In	18 Stret and Pottery Rd area	August 31 – September 2	22